

### REMARKS

In the Office Action mailed from the United States Patent and Trademark Office September 24, 2007, claims 1-7, 12-14, 16, 17, 19-22, 24-26, 29-34, 37-39, 43-45, 47-49 and 52-58 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al (U.S. Patent No. 5,505,409, "Wells") in view of Fronck et al (U.S. Patent No. 5,848,769, "Fronck"); and claims 1-14, 16, 17, 19-22, 24-43 and 45-58 were rejected under 35 U.S.C. 103(a) as being unpatentable over Falco (U.S. Patent No. 5,133,519, "Falco") in view of Fronck et al. Accordingly, Applicant respectfully provides the following:

#### Rejections Under 35 U.S.C. § 103(a)

Applicant respectfully submits that the prior art references cited alone or in combination do not teach or suggest each of the limitations. The standard for a Section 103 rejection is set forth in M.P.E.P 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Applicant respectfully submits that the references cited by the Examiner do not teach or suggest the limitations claimed in the present invention. In particular, an external fluid flow regulator incorporated into the surface of an object for regulating pressure gradients and influencing fluid flow across said surface, said regulator comprising: a removeably attached fluid flow regulator comprising: a leading edge comprising a surface capable of receiving a fluid thereon; an pressure recovery drop orthogonally disposed relative to the leading edge that extends a pre-determined

distance away from said leading edge and said fluid and its flow, wherein said pressure recovery drop comprises at least one drop face therein, said at least one drop face having a pre-determined height, said pressure recovery drop functions to regulate existing pressure gradients along said surface to optimize and equalize said fluid flow, wherein said regulation of said pressure gradients positively influences the flow properties and behavior of said fluid across said surface of said object, and the performance of said object subject to said fluid flow; a sub-atmospheric barrier that is suddenly generated as said fluid encounters and flows over said pressure recovery drop, said sub-atmospheric barrier comprising a low pressure area of fluid molecules having decreased kinetic energy that serve as a cushion between said higher kinetic energy fluid molecules in said fluid and the molecules at said surface to facilitate laminar flow and assist in the reduction of the separation potential of said fluid; and a trailing edge orthogonally disposed relative to the recovery drop that defines and extends from the base of said pressure recovery drop that provides a trailing flow boundary for said fluid.

The cited art fails to disclose an orthogonal relationship between the vertical surface and the trailing edge and between the vertical surface and the leading edge. Orthogonal is defined by the Merriam/Webster dictionary as having perpendicular slopes or tangents at a point of intersection. Accordingly, the claim limitations for “orthogonal” describes the relationship of the intersection of the angle formed by the vertical drop face, the trailing edge and the leading edge.

The pending Action indicates that column 3, line 64 of Wells teaches a vertical lee face, which reads over the “orthogonal pressure recovery drop.” However, column 3, line 64 teaches that the leeward step must have a vertical component, not that the lee step extend perpendicular from a longitudinal axis extending through the plane, nor that the lee step exist at an orthogonal angle relative to the leading and trailing surfaces as claimed in the present invention. Accordingly, Wells fails to read on the concept of an orthogonal pressure recovery drop. Falco

likewise teaches that passive micro steps should be rearward facing and comprise a vertical component, but likewise, Wells fails to teach that an orthogonal relationship needs to exist between the leading edge and the pressure recovery drop and between the trailing edge and the pressure recovery drop.

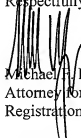
Because the art cited in the pending Office Action fails to teach or fairly suggest a removable orthogonal pressure recovery drop, Applicant respectfully request that the rejections under 35 U.S.C. § 103 (a) be withdrawn at this time.

#### CONCLUSION

Applicants submit that the amendments made herein do not add new matter and that the claims are now in condition for allowance. Accordingly, Applicants request favorable reconsideration. If the Examiner has any questions or concerns regarding this communication, the Examiner is invited to call the undersigned.

DATED this 24 day of January, 2008.

Respectfully submitted,

  
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